To: Norm Niedergang S-HE 8/31

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 375TH AIR BASE GROUP (MAC)
SCOTT AIR FORCE BASE, ILLINOIS 62225

5 AUG 1987

REPLY TO ATTN OF: CC

SUBJECT: Installation Restoration Program at Scott AFB

TO: United States Environmental Protection Agency (USEPA)
Region 5
Attn: Ms Mary Gatey
230 South Dearborn Street
Chicago IL 60604

1. Scott AFB conducted a meeting on 30 June 1987 between our officials, Major Brownley of the Air Force Occupational Environmental Health Laboratory (OEHL), and representatives of Environmental Resources Management, Inc. (ERM) concerning the Installation Restoration Program (IRP). The meeting consisted of an in-brief by Major Brownley, introduction of the major contractor (ERM), site visits, and an out-brief.

2. Because of time restraints, the invitations for both the Illinois EPA and the USEPA did not get out in time. This letter should give you the information you will need. Attached is a copy of the meeting agenda, Major Brownley's briefing slides, and a copy of proposed field activities from ERM.

3. For your information, the following personnel were at the meeting:

Col Thomas Diamond	Deputy Base Commander
Col Wyatt L. McGhee	HQ MAC Bioenvironmental Engineering
Lt Col Walter E Smith	Base Civil Engineer
Lt Col Dennis L. Olson	Judge Advocate Office
Major Dennis Brownley	AF Occupational and Environmental Health Lab
Capt William Denigon	Base Flight Surgeon's Office
1st Lt Douglas C. Huff	Base Bioenvironmental Engineering
1st Lt Jerry W. Lobb	Wing Public Affairs
2d Lt Richard Sloop	Base Environmental Coordinator
2d Lt Wesley D. Scott	Base Bioenvironmental Engineering
Henry W. Caughman	HQ MAC Environmental Planning
Nancy J. Manley	Deputy Base Civil Engineer
Dennis I. Tudor	Base Environmental Planning
Nick De Salvo	ERM, West Chester PA
Louis Meschede	ERM, Deerfield IL
Jerry Demuro	ERM, West Chester PA
Jim Talbot	ERM, West Chester PA

4. If there are any questions concerning Scott's IRP, please contact the Base Environmental Coordinator, Lt Richard E. Sloop Jr., at (618) 256-2092.

R. T. DIXON, JR., Colonel, USAF
Commander

3 Atch
1. Meeting Agenda
2. Briefing Slides
3. ERM Letter with proposed activities
4. Site Location Map

Environmental
Resources
Management, Inc.

999 West Chester Pike • West Chester, Pennsylvania 19382 ☎ (215) 696-9110

03 July 1987

Major Dennis Brownley, P.E.
USAF OEHL/TS
Brooks Air Force Base, TX 78235-5000

Dear Major Brownley:

It was a pleasure meeting you during the site visit to Scott AFB on June 30. Based on our discussions at the morning briefing and field trips to each designated study site, I wish to reiterate what was my understanding regarding the forthcoming work plan preparation and upcoming site confirmation study. Additional issues discussed and requiring clarification are listed.

1. OEHL would send ERM a sample work plan; as you mentioned, probably from Norton AFB.

2. OEHL would check their files regarding any data/information turned in by Engineering Science during the Phase I Records Search. Scott AFB has no information other than the Phase I Report, on file.

3. OEHL would send ERM comments on the Phase I Report submitted by any pertinent federal and state regulatory agencies. Scott AFB has no such comments on file.

4. OEHL would make a determination regarding level of data validation required, vis-a-vis, "Tier II" type packages to be provided by ERM with data summaries and approve any costs associated with providing such a package to OEHL. The reason for this request stems from ERM's concern for liability regarding our ability to validate data packages from laboratories and our understanding that OEHL only requires data summaries, not Tier II or EPA Contract Lab type data packages. For some reason confusion has arisen regarding what constitutes a "Tier-II" package based on previous discussions between our QA chemist, Mr. Vitale and OEHL's Judy Burris.

5. Apparently, ERM's study is a pollution confirmation study, not a comprehensive RI/FS. Our work plan, however, will address FS approaches as indicated in the model work plan outline, but not go into great depth. A summary of site sampling protocols/methods are provided (Attachment 1) based on our field review of the required effort. By our count, we have 44 borings and 32 wells (@ 35 feet average).

6. Scott AFB will provide some logistic support for ERM's field activities, which will not be factored into our cost proposal:
   (a) removal of drilling muds and potentially toxic materials in drums to off-base disposal sites.
   (b) Preparation of wetland areas adjacent to the landfill and FPTA#2 for access by drill rigs. This may require building temporary roads along the eastern and southern boundaries of the landfill or some reasonable alternative.
   (c) Office and depot spaces for personnel and equipment. Your long list of requirements, which you read at the meeting and which ERM did not receive, may also pertain. Please provide us with a copy of what Scott Air Force Base is being asked to provide the contractor.

7. OEHL will require only a lump sum cost proposal at the time of submission of the final report. This varies from our understanding that a more detailed (broken out) cost proposal was required. A clarification is requested.

8. The schedule of deliverables presented at the Tuesday meeting varied substantially from what was detailed in our Statement of Work reviewed from OEHL. According to your "new" schedule only one draft (not two) will be submitted on/before August 14; the final report is due November 24, 1987. Also, there was a note to the effect that the Statement of Work will be accomplished by October 21. Please clarify these deliverable dates as well as the meaning of this last statement.

9. An eighth site was added during the June 30 session that will require some further thought and negotiation. Soil mercury contamination beneath Building 1680, now under renovation, was deemed critical enough to warrant further confirmation studies. We examined this site on July 1 and noted the following:
   (a) Hg vapor levels measured little or no contamination in the structure itself (base data);
   (b) Soil grab samples, collected by Sgt. Jack Dilorenzo, Bio Med staff, indicated contamination beneath certain rooms;

(c) Access beneath the building is difficult and confining, probably requiring use of Tyvek suits and respirators or other safety precautions;
(d) Access through the interior flooring, due to the fact that construction is underway, is easier now than it may be next year when you indicated ERM would be on site. It would be advantageous to do a pollution confirmation study immediately, which is what ERM recommends.

ERM requests a determination that the Hg contaminated site be added to the list of seven and recommends that, if added, field work be initiated while the building is under renovation, not after it is refurbished.

10. OEHL had, prior to the site visit, indicated that their intention was to obligate the money this calendar year for the site confirmation studies at Scott AFB. Your information suggested no field work would be undertaken before Spring 1988. Some guidance on this matter is requested for purposes of staff planning. Our site visit indicated that the ability to drill at the landfill may depend on the "wetness" of the area surrounding the landfill, which is perennial wetland and mostly flooded bottomland forest. Drilling during the fall or winter would minimize this problem. ERM recommends that a Fall 1987 start-up be initiated.

If you could respond to these issues at your earliest convenience, we would be most appreciative.

Sincerely yours,

Peter D. Klose/for

James J. Talbot, Ph.D.
Project Manager

JJT:kss
cc: Ms. Sue Stark, OEHL/TS
Lt. Rick Sloop, Base Civil Engineering (Scott AFB)
Mr. Louis Meschede, ERM-NC
Dr. Peter Klose, ERM

The ERM Group

ATTACHMENT 1

PROPOSE FIELD ACTIVITIES
Scott Air Force Base

8550 Spill Site

- Geophysics
- Soil Gas
- Three 20ft soil borings (three samples/boring) One grab water sample from each boring to be analyzed for petroleum hydrocarbons
- Three monitoring wells-approximate depth 35ft. (if necessary)
- Soil and water samples from monitoring wells to be analyzed using fuel spill protocols A1, A2

1965 Spill Site

- Four 25ft soil borings (4 sample/boring)
- Three monitoring wells - approximate depth 35ft.
- Soil and water samples analyzed using fuel spill protocols A1, A2, A3

FPTA 1

- Geophysics
- Soil Gas
- Six 20ft soil borings (3 samples/boring)
- Three monitoring wells - approximate depth 35ft.
- Soil and water samples analyzed using liquid waste disposal and burn pit protocols D1-D9

FPTA 2

- Geophysics
- Soil Gas
- Four 15ft soil borings (3 samples/boring)
- Four monitoring wells - approximate depth 35ft.
- Soil and water samples analyzed using landfill protocols C1-C6

The ERM Group

FPTA 3

- Geophysics
- Soil Gas
- Four 20ft soil borings (3 samples/boring)
- Three monitoring wells - approximate depth 35ft
- Soil and water samples analyzed using liquid waste disposal and burn pit protools D1-D9

Landfill

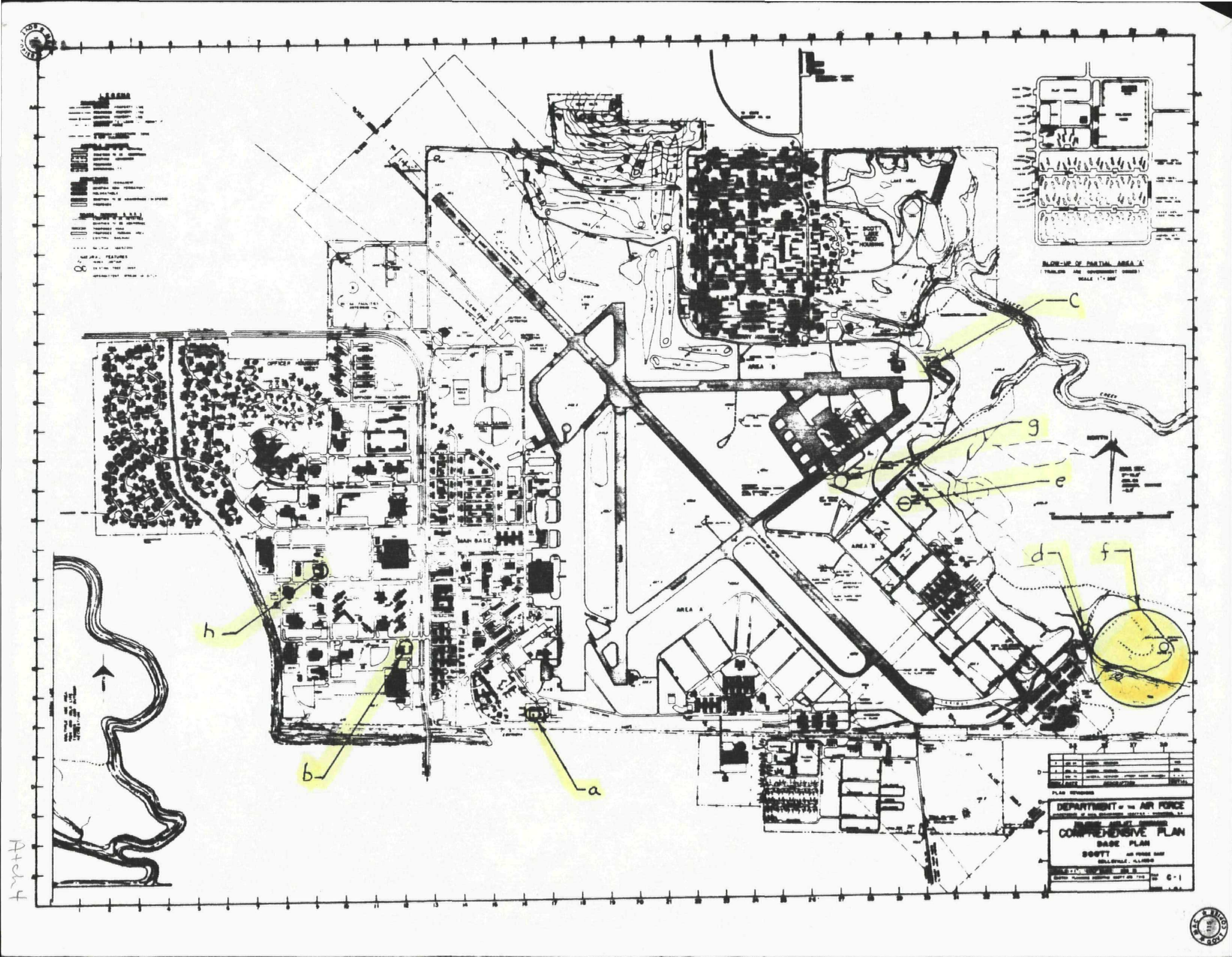
- Geophysics
- Soil Gas
- Twenty 40ft landfill borings (2 samples/borings)
- Three down-gradient borings (40ft) with borehole geophysics
- Thirteen 35 ft monitoring wells - ten to the water table, three cluster wells
- Six sediment and six surface water samples in Silver Creek
- Soil sediment and water samples to be analyzed using landfill protocols C1-C6, entomology shops and mixing areas protocols E1-E3, and transformer storage protocol F1

Sludge Weathering Lagoon

- Geophysics
- Soil Gas
- Four 20ft soil borings (2 samples/boring)
- Three monitoring wells (approximately 35ft)
- Soil and water samples analyzed using landfill protocols C1-C6

Building 1680

- Maximum of 20 surface soil samples (0-6 inches) at various locations under the building (to be determined)
- Samples to be analyzed for soil mercury


BLOW-UP OF PARTIAL AREA 'A'
MAIN BASE
AREA A
AREA B
a
b
c
d
e
f
g
h
DEPARTMENT OF THE AIR FORCE
COMPREHENSIVE PLAN
BASE PLAN
SCOTT
BELLEVILLE, ILLINOIS
C-1

Attach

AGENDA

INSTALLATION RESTORATION PROGAM (IRP) SITE ASSESSMENT MEETING

SCOTT AFB, ILLINOIS - 30 JUNE 1987

1. Welcome

2. Introduction

3. Handouts

   a. IRP Briefing
   b. Schedule for Review of Stage 1 Draft Plans
   c. Work Plan and Quality Assurance Project Plan Format
   d. IRP Stage 1 Schedule
   e. Phase I Site Information
   f. Analytical Protocols

4. IRP Briefing

5. Discussion of IRP Program

6. Discussion of Sites

7. Site Visits

8. Post Site Visit Discussion

Atch 1

SCHEDULE FOR REVIEW OF STAGE 1 DRAFT PLANS

1. Draft Work Plan and Quality Assurance Project Plan sent for Air Force and Regulatory Agency Review ..... 14 Aug 1987

2. All Comments Provided to Technical Services ..... 25 Sep 1987

3. Statement of Work Accomplished ..... 21 Oct 1987

4. Final Work Plan and Quality Assurance Project Plan ..... 24 Nov 1987

5. Contractor's Performance Starts..... 6 weeks after funds become available

WORK PLAN OUTLINE

I. INTRODUCTION

1.1 AF IRP Program

1.1.1 Program Origins (Background of IRP Development)
1.1.2 Program Organization (Definition of Phases)

1.2 IRP Long Range Objectives

1.2.1 Program Objectives

1.3 Objectives of Current Field Work

1.3.1 Integrated Installation Restoration Program Objectives
1.3.2 Program Documents

II. BACKGROUND

2.1 Background of Base Activities

2.1.1 Description of Installation
2.1.2 Past Waste Management Practices

2.2 Site-Specific Background Information (By site)

2.2.1 Description of Site Setting and Location
2.2.2 Types of Wastes and Concentrations
2.2.3 Pathways Affected

III. ENVIRONMENTAL SETTING

3.1 Geophysical Setting

3.1.1 Physiography
3.1.2 Topography

3.2 Geology

3.3 Hydrogeology

3.3.1 Surface Water
3.3.2 Ground Water
3.3.3 Water Use

3.4 Climatology/Air

3.5 Human Environment

3.5.1 Population
3.5.2 Demographics
3.5.3 Land Use

IV. BASIS FOR PROGRAM APPROACH

4.1 Physio-Chemical Properties of Contaminants

4.2 Pathways and Receptors

4.3 Environmental/Health Effects

4.4 Preliminary Technologies

4.5 Applicable or Relevant and Appropriate Requirements (ARARs)

4.6 Data Requirements

V. SCOPE OF WORK

5.1 Organization of Effort

5.1.1 Operable Units
5.1.2 Combined Site Investigations

5.2. General Discussion of Integrated IRP Tasks

5.2.1 Field-Related Tasks

5.2.1.1 Soil Gas Surveys
5.2.1.2 Geophysical Surveys
5.2.1.3 Subsurface Soil Surveys
5.2.1.4 Borehole Geophysical Surveys
5.2.1.5 Monitoring Wells
5.2.1.6 Aquifer Tests
5.2.1.7 Groundwater Samples
5.2.1.8 Trenching
5.2.1.9 Drum Sampling

5.2.2 Evaluation-Related Tasks

5.2.2.1 Data Management
5.2.2.2 Hydrogeologic Assessment
5.2.2.3 Demographic Survey
5.2.2.4 Evaluation and Screening of Data
5.2.2.5 Endangerment Assessment
5.2.2.6 Map Preparation
5.2.2.7 Treatability Studies
5.2.2.8 Reviewable Integrated IRP Reports

5.2.3 Feasibility Study Tasks

5.2.3.1 Identification of General Response Actions
5.2.3.2 Identification and Screening of Technologies
5.2.3.3 Development of Alternatives
5.2.3.4 Screening of Alternatives
5.2.3.5 Technical Evaluation of Alternatives
5.2.3.6 Institutional Requirements Evaluation

5.2.3.7 Exposure Assessment
5.2.3.8 Environmental Impact Evaluation
5.2.3.9 Detailed Cost Analysis of Selected Alternatives
5.2.3.10 Selection of Recommended Remedial Action

5.3 Site-Specific Discussion

5.3.1 Field Investigation

(List Applicable Field-related Tasks)

5.3.2 Evaluation of Alternatives

(List Applicable Feasibility Study Tasks)

VI. **REPORTING REQUIREMENTS**

6.1 Monthly Status Report

6.2 Informal Technical Information Report (Raw Data from Sampling)

6.3 Reviewable RI/FS Report

VII. **SCHEDULE**

QUALITY ASSURANCE PROJECT PLAN (QAPP)
OUTLINE

Title Page

Table of Contents

I. QUALITY ASSURANCE/QUALITY CONTROL

1.1 Introduction
1.2 Project Description
1.3 Project Organization and Responsibility
1.4 QA Objectives for Measurement Data

1.4.1 Accuracy
1.4.2 Precision
1.4.3 Completeness
1.4.4 Representativeness
1.4.5 Comparability

1.5 Sampling Procedures (applicable guidelines or references)

1.6 Sample Custody

1.6.1 Chain-of-Custody

1.6.1.1 Sample Tags
1.6.1.2 Chain-of-Custody Record
1.6.1.3 Transfer-of-Custody and Shipment
1.6.1.4 Laboratory Custody Procedures

1.6.2 Documentation

1.6.2.1 Sample Identification
1.6.2.2 Daily Logs
1.6.2.3 Corrections to Documentation
1.6.2.4 Photographs

1.6.3 Sample Handling, Packaging and Shipping

1.6.3.1 Sample of Packaging
1.6.3.2 Shipping Containers
1.6.3.3 Marking and Labeling

1.7 Calibration Procedures and Frequency

1.8 Analytical Procedures

1.9 Data Reduction, Validation and Reporting

1.10 Internal Quality Control Checks

1.11 Performance and System Audits

1.12 Preventive Maintenance

1.13 Field and Laboratory Procedures Used to Assess Data Precision, Accuracy and Completeness

1.13.1 Accuracy
1.13.2 Precision
1.13.3 Completeness

1.14 Corrective Action

1.15 Quality Assurance Reports

II. METHODS PROTOCOLS

2.1 Geophysical Techniques

2.2 Drilling

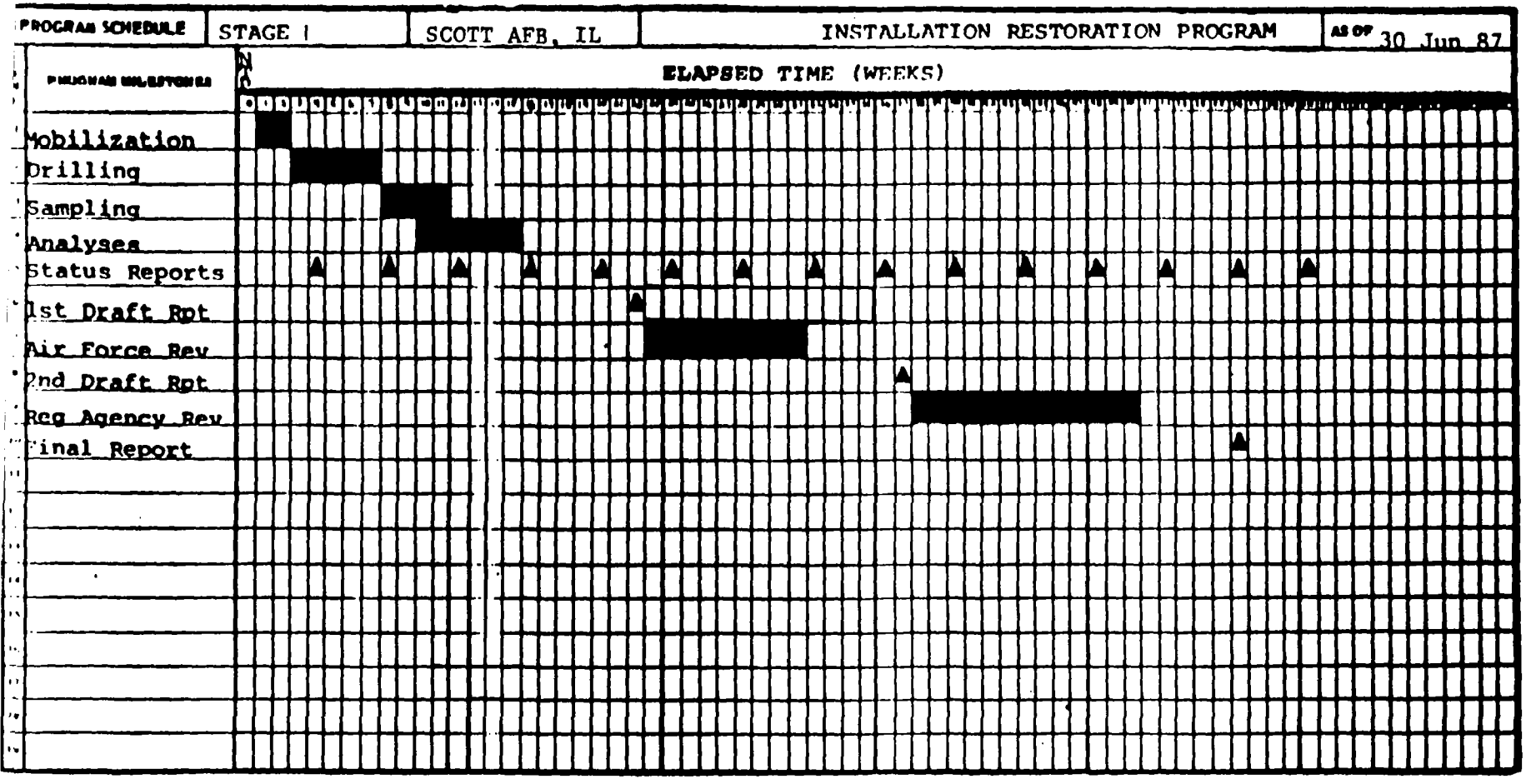
2.3 Well Installation

2.4 Sample Collection

2.4.1 Surface and Groundwater Samples
2.4.2 Soil and Sediment Samples
2.4.3 Soil Gas Samples
2.4.4 Trenching and Drum Samples
2.4.5 Required Containers, Preservation Techniques, Holding Times and Sample Volumes

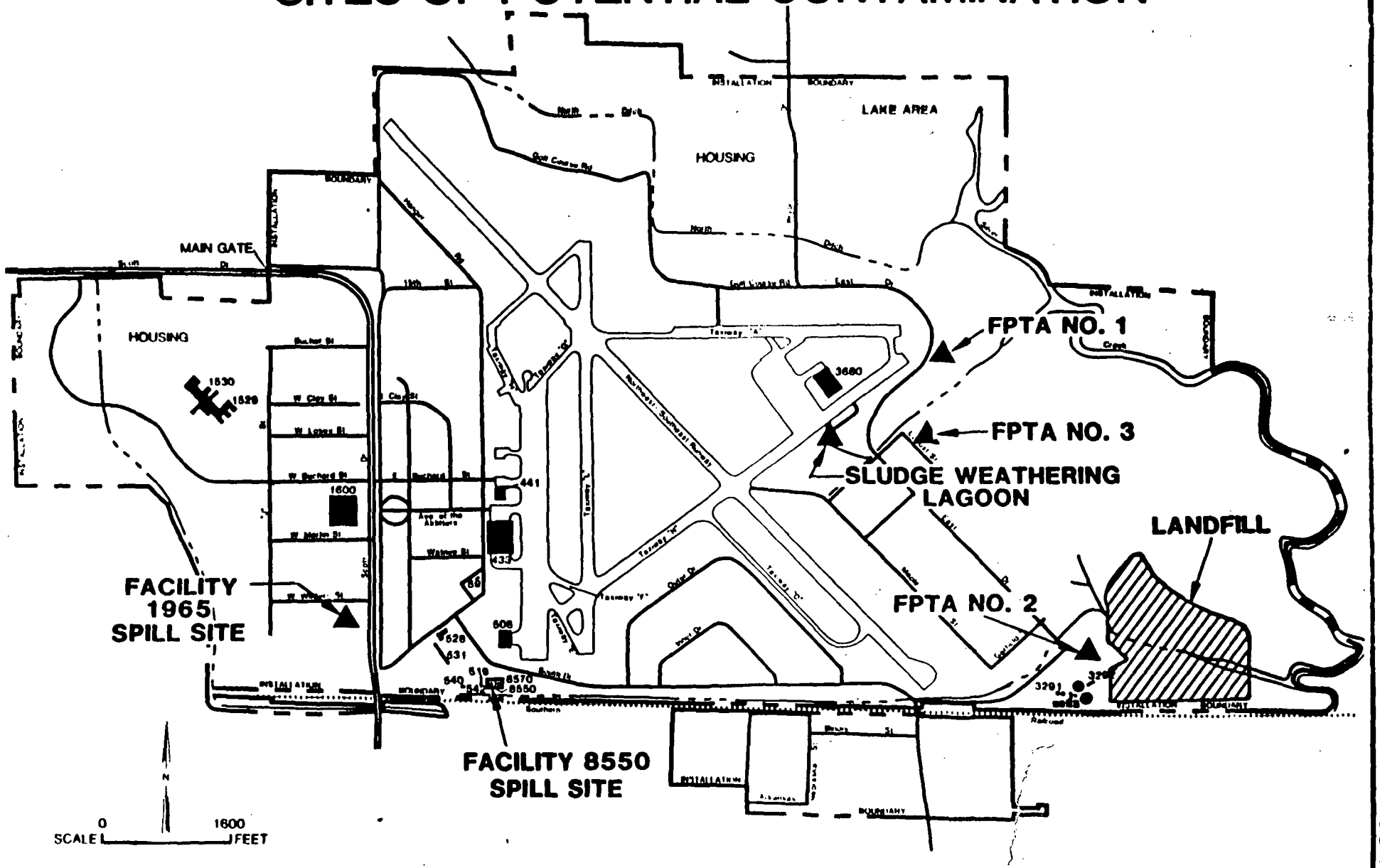
2.5 Site Management

Ref: Chapter 1, Test Methods for Evaluating Solid Waste, 3rd Edition, SW-846 (USEPA, 1986).


PROGRAM SCHEDULE
STAGE I
SCOTT AFB, IL
INSTALLATION RESTORATION PROGRAM
AS OF 30 Jun 87
PROGRAM MILESTONES
ELAPSED TIME (WEEKS)
Mobilization
Drilling
Sampling
Analyses
Status Reports
1st Draft Rpt
Air Force Rev
2nd Draft Rpt
Reg Agency Rev
Final Report

SCOTT AFB

SITES OF POTENTIAL CONTAMINATION



SOURCE: INSTALLATION DOCUMENTS

FIGURE 1

TABLE 1

SITES EVALUATED USING THE HAZARD ASSESSMENT RATING METHODOLOGY SCOTT AFB

Rank	Site	Operation Period	HARM Score(1)
1	Fire Protection Training Area No. 2	1953-1969	76
2	Landfill	Early 1940's-Present	73
3	Fire Protection Training Area No. 1	1942-1952	66
4	Facility 8550 Spill Site	1977	62
5	Fire Protection Training Area No. 3	1969-Present	59
6	Facility 1965 Spill Site	Mid 1970's	52
7	Sludge Weathering Lagoon	1975-1981	47

(1) This ranking was performed according to the Hazard Assessment Rating Methodology (HARM) described in Appendix G. Individual rating forms are in Appendix H.

by wastage to ground, storm or sanitary sewers or contract disposal. Sludge generated by large bulk fuel storage facilities (No. 8550 and 8570) and possibly by others was placed in a bermed area adjacent to tanks 8552 and 8554 for drying from about 1975 to 1980. Existing policy now calls for drumming of all this waste for off-site disposal. Two tanks have been involved in major fuel spills and leaks; these are Facility 8550 and Facility 1965. These episodes are discussed in the subsequent section under Spills and Leaks.

Spills and Leaks

. Base records and interviews with present and past personnel indicate several significant fuel leaks have occurred since 1950. Base records kept since 1974 also indicate that many minor spills and leaks have occurred. These minor spills were either allowed to evaporate, were picked up by Liquid Fuels Maintenance or the fire department, or were washed down sanitary or storm sewers with eventual discharge to Silver Creek.

The locations of seven significant leaks and spills are indicated on Figure 4.2. Two spills were noted in the SPCC plan of 1982 involving Fuel Oil No. 6 in February, 1978. The first spill resulted in about 250 gallons of Fuel Oil No. 6 entering a drainage ditch adjacent to the fueling point at Bldg. 3191. The drainage ditch discharges to Silver Creek and some oil was reported to have reached the creek. The second February, 1978 spill resulted in about 1,500 gallons of Fuel Oil No. 6 spilling into Silver Creek due to a rupture in a steam heating coil serving the 420,000 gallon tank at Bldg. No. 45.

Two other spills were reported involving JP-4. In 1977 approximately 13,000 gallons of JP-4 fuel were estimated lost in an incident involving Tank 8550. Base records are not clear on this matter. The incident alledgedly involved a 20,000 gallon spill, but only 6,000 or 7,000 gallons of fuel were recovered out of the diked area surrounding the tank, and an undetermined amount of fuel was discharged to Silver Creek. Seven recovery wells were dug to attempt to retrieve fuels that may have infiltrated into subsurface areas. The wells were dug about 18 inches in diameter and about 9 feet deep. The wells did not, however, yield any fuel. A recent incident (October, 1983) also involving JP-4 resulted in spillage of about 230 gallons into a drainage ditch near the

intersection of Avenue of the Airlifters and Hanger Road. The drainage ditch discharged to the South Ditch/Silver Creek waterways. The incident originated when a fuel truck was involved in an accident with another vehicle.

A spill of 14 gallons of PCB-containing transformer fluid (25-27 ppm) occurred in 1984 onto the gravelled area of the DPDO storage yard. Records indicate that all PCB residue was removed during cleanup operations at that time.

Another incident involving fuels occurred when an underground tank adjacent to the Facility 1965 BX service station was discovered to be leaking in the mid-1970's. The leak was attributed to a faulty valve on the tank. Since the leak was discovered indirectly from odors in the adjacent sanitary sewer lines, it is not known how long the tank may have leaked. A major effort was undertaken to recover lost fuel and the tank was dug up, repaired and put back in place. Although several barrels of fuel were recovered from the pit dug to retrieve the tank, the extent of any remaining contamination (if any) was not documented.

One spill of potentially hazardous material during the 1950's was noted. On one occasion during the 1950's a spill of aviation gasoline from an aircraft was mixed with fire extinguishing foam and removed from the concrete area where the spill occurred. This gasoline-foam mixture, estimated to include about 100 gallons of gasoline, was placed in a pit approximately 20 feet square and one to two feet deep south of the south end of the main runway. This site remains visible at present as a wet-weather pond in a black locust grove.

Pesticide Utilization

Pesticides have been used at Scott AFB for controlling weeds, insects, rodents and fungus. Pesticides used at the base are listed in Appendix D. Entomology mixes most of the chemicals used on base inside and/or adjacent to Building 1050. The golf course and grounds crew also mixes pesticides at a building located adjacent to the golf course (Bldg. 1197). In practice, the container rinsewater has been put back into sprayers for dilution water. Empty containers are punctured and disposed at the landfills used by the base before 1976 and since that time they have been disposed off base. Residual pesticide in the spray equipment is used at various areas where the material is being applied.

Sprayers are either rinsed at random locations on the base with the rinsewater run out along fence lines or they are rinsed at Building 514 or 1197 with the initial rinsewater drained to a sanitary sewer and final rinse to storm sewers.

Fire Protection Training

Fire protection training at Scott AFB has been conducted at three sites. These site locations are depicted in Figure 4.3. Each site is described in the following discussion.

Fire Protection Training Area (FPTA) No. 1

Fire Protection Training Area No. 1 was located east of East Drive across from present-day Taxiway "A". This site was activated in approximately 1942 and was used until the early 1950's. At this site fuel was stored in 55-gallon drums adjacent to the site; drums were emptied onto a soil and gravel-covered area and the fuel was ignited for training exercises. Extinguishing agents used were CB and protein foam. Fuels included contaminated gasoline, oils, and paint thinners, as well as scrap fabric-covered aircraft. Unburned fuel collection and oil-water separation were not practiced at this site. Exact frequency of burns is unknown but reports indicated that use was at least monthly with several hundred gallons of fuel used each training exercise. During the early 1950's fire protection training was moved to site number 2, described later. At present the site of FPTA No. 1 is level, covered with grass, and is the site of the Small Arms Range. Because of the nature and duration of the activities at the site, a potential for underground contaminant migration exists for the site.

Fire Protection Training Area (FPTA) No. 2

Fire Protection Training Area No. 2 was located at the southeast corner of the base at the western edge of the base landfill. This site was used for fire training exercises from the early 1950's until approximately 1969, when fire training moved to the present site, FPTA No. 3. At this site fuel was stored in 55-gallon drums adjacent to the site; there were often 100 to 200 such drums at the site. Drums were emptied by tipping over onto a soil and gravel-covered area and the spilled fuel was ignited for fire training exercises. Extinguishing agents included CB, protein foam, and carbon dioxide. Fuels included waste alcohol, gasoline, paint thinners, and JP-4. Burn frequencies averaged one or

two times per month, with approximately 300 to 500 gallons of fuel used per exercise. Unburned fuel collection and oil-water separation were not practiced at this site. An aircraft hull, that of a B-25, was used in exercises; when fire training exercises moved to the present location this aircraft hull was pushed into the landfill as part of the site closure and grading. At present this site is at the western edge of the landfill area and has uneven terrain with sparse vegetation. Because of the nature and duration of activities at the site, a potential for underground contaminant migration exists for the site.

Fire Protection Training Area (FPTA) No. 3

Fire Protection Training Area No. 3 is located northeast of Locust Street, and is the present site of fire training exercises. This site was activated in approximately 1969, and originally consisted of an aircraft mockup on a soil and gravel-covered area with no unburned fuel recovery and collection. In approximately 1979 a fuel recovery system was installed. This system includes an oil-water separator and an underground fuel storage tank. The water phase from the oil-water separator discharges to the sanitary sewer. At this site burn frequency is two to three times per quarter; a typical burn involves the release of approximately 900 gallons of fuel into the burn area, ignition and flame development for 40 seconds, and extinguishing with various agents including AFFF, Halon 1211, CB, ABC dry chemical, and foam.

Visual examination of the area during the site visit indicated surficial contamination and a slight fuel odor in the burn area. Because of the nature of the activities performed at the site, a potential for contaminant migration exists for the site.

BASE WASTE DISPOSAL METHODS

The facilities on Scott AFB which have been used for the management and disposal of waste can be categorized as follows:

- Landfill
- Surface Impoundments
- Explosive Ordnance Disposal Area
- Low-Level Radioactive Waste Burial Site
- Incinerator

- o Wastewater Treatment System
- o Sludge Weathering Lagoon
- o Storm Water Drainage System
- o Oil-Water Separators

These facilities are discussed individually in the following subsections.

Landfill

One on-base landfill at Scott AFB has been used for disposal of non-hazardous solid wastes and some industrial waste materials. The location of this landfill and its estimated boundaries are shown in Figure 4.4. The boundaries show that the landfill occupied approximately 60 acres.

The landfill was begun in the early 1940's, and was used for domestic refuse, hardfill and construction rubble, wastewater treatment plant sludge, and industrial wastes. The landfill was trench-and-fill operation, with trenches 8 to 10 feet deep. Over the period of use up to three or four layers of trench-and-fill operations were performed, giving an approximate 30- to 40-foot depth of fill material according to interviewee estimates.

Industrial wastes reported by interviewees to be disposed in the landfill include a quantity of paint (exceeding 1,000 gallons) in cans, pesticides, oils, transformers, and two or three drums (of unknown contents) disposed in the late 1960's. On occasion during the 1950's burning of landfill materials was practiced. An explosive ordnance disposal (EOD) area and FPTA No. 2 are located within the landfill boundaries.

The landfill was closed in 1976; since that time base refuse has routinely been transported off-base and disposed in a commercial landfill facility. Since 1983, hardfill material and wastewater treatment plant sludge again have been disposed at the surface of the on-base landfill.

At present the landfill surface is moderately level and a soil cover is present. Sparse vegetation covers much of the surface. Recently disposed hardfill wastes and wastewater treatment sludge are visible.

Wastewater Treatment System

Wastewater treatment on Scott AFB is performed by the wastewater treatment plant located at the southeastern corner of the base west of the landfill site (see Figure 4.6). Sanitary wastewaters, aqueous effluents from several oil-water separators, and wastewaters from several industrial shops flow by gravity and through force mains to the plant. The plant consists of manual bar screens, three comminutors, four rectangular primary settling tanks, two standard rate trickling filters operated in parallel, three circular final clarifiers, primary and secondary sludge digesters, sludge drying beds, disinfection facilities, and a 2.8 mgd rapid sand filter. The average flow is 1.5 mgd, with maximum and minimum capacities of 2.8 and 0.9 mgd, respectively. The plant operates under an NPDES permit, and discharges to Silver Creek.

Sludge from the treatment facility is digested and spread on drying beds, and then is either transported off-base for disposal at a commercial landfill or is disposed on-base in the landfill area.

Sludge Weathering Lagoon

A small earthen sludge weathering lagoon was constructed and used southeast of POL tanks 8552 and 8554 during the mid-1970's. The location of this lagoon is shown in Figure 4.7. This lagoon was a rectangle approximately 20 feet wide by 40 feet long, and was used for only one or two years. The lagoon was intended for use in weathering tank bottoms sludge removed from the adjacent POL tanks. Reports by interviewees indicated that on occasion other industrial waste liquids, primarily scrap paint, paint thinners and waste oils, may have been disposed in this pit. The soils (down to a depth of about 2 feet) were removed from the site and taken off-base. The site was then filled in with sand and gravel to grade in the late 1970's. Visual inspection of the area during the site visit showed minor indications of the existence of this lagoon. Because of the nature of activities at the site and the lack of verification of contaminant removal, a potential for underground contaminant migration exists for this site.

SECTION 5

CONCLUSIONS

The goal of the IRP Phase I study is to identify sites where there is potential for environmental contamination resulting from past waste disposal practices and to assess the probability of contamination migration from these sites. The conclusions given below are based on field inspections; review of records and files; review of the environmental setting; interviews with base personnel, past employees and local, state and federal government employees; and assessments using the HARM system. Table 5.1 contains a list of the potential contamination sources identified at Scott AFB and a summary of the HARM scores for those sites.

FIRE PROTECTION TRAINING AREA NO. 2

There is sufficient evidence that the Fire Protection Training Area No. 2 site has potential for creating environmental contamination and a follow-on investigation is warranted. During the period of use of this site, waste combustibles, including paint thinners and oils, were used as fuels and were deposited directly onto the ground prior to ignition.

Site geology consists of a moderate (twenty-foot) mantle of loess overlying glacial till. The loess is a wind-blown silt or silt and clay; the till is a hard, dense mixture of clay, silt, sand and gravel with infrequent sandy lenses enclosed. The sandy lenses, if present, form the usable aquifer at this site. The depth to ground water in this area ranges from five to fifteen feet below grade. This site received a HARM score of 76.

LANDFILL

There is sufficient evidence that the landfill site has potential for creating environmental contamination and a follow-on investigation

is warranted. The landfill site was used for over 30 years; during the period of use instances of industrial waste disposal in the landfill were reported.

Local geology is dominated by modern alluvium, a mixture of clay, silt, sand and gravel containing discontinuous sand and gravel layers. Ground-water levels are typically shallow in the range of one to five feet below grade. The alluvial aquifer probably discharges to adjacent surface water. This site received a HARM score of 73.

FIRE PROTECTION TRAINING AREA NO. 1

There is sufficient evidence that the Fire Protection Training Area No. 1 site has potential for creating environmental contamination and a follow-on investigation is warranted. This site was used for fire protection training from the early 1940's until the early 1950's. During this period fuels, including combustible industrial wastes such as paint thinners and oils, were deposited on to the ground prior to ignition.

Site geology consists of a moderate (twenty-foot) mantle of loess overlying glacial till. The loess is a wind-blown silt or silt and clay; the till is a hard, dense mixture of clay, silt, sand and gravel with infrequent sandy lenses enclosed. The sandy lenses, if present, form the usable aquifer at this site. The depth to ground water in this area ranges from five to fifteen feet below grade. This site received a HARM score of 66.

FACILITY 8550 SPILL SITE

There is sufficient evidence that the Facility 8550 Spill Site has potential for creating environmental contamination and a follow-on investigation is warranted. Approximately 20,000 gallons of JP-4 were spilled in the late 1970's at this site due to a faulty tank valve. Although large amounts of fuel were recovered, approximately 12,000 gallons were not accounted for at this site.

Site geology consists of a moderate (twenty-foot) mantle of loess overlying glacial till. The loess is a wind-blown silt or silt and clay; the till is a hard, dense mixture of clay, silt, sand and gravel with infrequent sandy lenses enclosed. The sandy lenses, if present,

form the usable aquifer at this site. The depth to ground water in this area ranges from five to fifteen feet below grade. This site received a HARM score of 62.

FIRE PROTECTION TRAINING AREA NO. 3

There is sufficient evidence that the Fire Protection Training Area No. 3 site has potential for creating environmental contamination and a follow-on investigation is warranted. This site has been used for fire protection training exercises since the late 1960's, and until 1979 did not have an unburned fuel recovery facility.

Site geology consists of a moderate (twenty-foot) mantle of loess overlying glacial till. The loess is a wind-blown silt or silt and clay; the till is a hard, dense mixture of clay, silt, sand and gravel with infrequent sandy lenses enclosed. The sandy lenses, if present, form the usable aquifer at this site. The depth to ground water in this area ranges from five to fifteen feet below grade. This site received a HARM score of 59.

FACILITY 1965 SPILL SITE

There is sufficient evidence that the Facility 1965 Spill Site has potential for creating environmental contamination and a follow-on investigation is warranted. At this spill site, an unknown quantity of motor fuel was lost in the mid 1970's due to a faulty tank fitting. Some clean-up at the site was initiated and the tank was repaired. However, due to the time lag in discovering the leakage and the unverified clean-up at the site, the potential for contamination still exists.

Site geology consists of a moderate (twenty-foot) mantle of loess overlying glacial till. The loess is a wind-blown silt or silt and clay; the till is a hard, dense mixture of clay, silt, sand and gravel with infrequent sandy lenses enclosed. The sandy lenses, if present, form the usable aquifer at this site. The depth to ground water in this area ranges from five to fifteen feet below grade. This site received a HARM score of 52.

SLUDGE WEATHERING LAGOON

There is sufficient evidence that the sludge weathering lagoon site has potential for creating environmental contamination and a follow-on investigation is warranted. Upon closing of the site, the sludges and other waste materials contained in the lagoon were removed along with some contaminated soils. The site was filled and graded. No samples were taken, however, to verify that decontamination was complete.

Site geology consists of a moderate (twenty-foot) mantle of loess overlying glacial till. The loess is a wind-blown silt or silt and clay; the till is a hard, dense mixture of clay, silt, sand and gravel with infrequent sandy lenses enclosed. The sandy lenses, if present, form the usable aquifer at this site. The depth to ground water in this area ranges from five to fifteen feet below grade. The site received a HARM score of 47.

SECTION 6
RECOMMENDATIONS

Seven sites were identified at Scott AFB as having the potential for environmental contamination. These sites have been evaluated and rated using the HARM system which assesses their relative potential for contamination and provides the basis for determining the need for additional Phase II IRP investigations. These sites have sufficient potential to create environmental contamination and warrant Phase II investigations. The sites evaluated have been reviewed concerning land use restrictions which may be applicable.

RECOMMENDED PHASE II MONITORING

The subsequent recommendations are made to further assess the potential for environmental contamination from waste disposal areas at Scott AFB. The recommended actions are sampling and monitoring programs to determine if contamination does exist at the site. If contamination is identified in this first-step investigation, the Phase II sampling program will probably need to be expanded to define the extent and type of contamination. The recommended monitoring program is summarized in Table 6.1 and discussed below for each site.

The hydrogeologic conditions present at each waste disposal facility are entirely site-specific due to variations in geology, topography, land use modifications, etc. These natural conditions or man-made changes in the local environmental setting must be clearly understood in order to design an effective ground-water quality monitoring system. At present, these site-specific conditions existing at Scott AFB waste disposal or hazardous material management facilities are unknown.

Soil test borings and temporary observation wells may be employed to obtain site-specific information. A systematic, more efficient and

TABLE 6.1
RECOMMENDED MONITORING PROGRAM FOR PHASE II IRP
AT SCOTT AFB

	Site (Rating Score)	Recommended Monitoring Program
1.	Fire Protection Training Area No. 2 (76)	Conduct geophysical survey to determine subsurface conditions and optimum monitoring well locations. Install four wells based upon site-specific hydrogeologic conditions. Analyze water samples for the parameters listed in Table 6.2.
2.	Landfill (73)	Conduct geophysical survey to determine subsurface conditions and optimum monitoring well locations. Install ten wells at selected locations around the facility, based upon site-specific hydrogeologic conditions. Analyze water samples for the parameters listed in Table 6.2.
3.	Fire Protection Training Area No. 1 (66)	Conduct geophysical survey to determine subsurface conditions and optimum monitoring well locations. Install four wells based upon site-specific hydrogeologic conditions. Analyze water samples for the parameters listed in Table 6.2.
4.	Facility 8550 Spill Site (62)	Conduct geophysical survey to determine subsurface conditions and optimum monitoring well locations. Install four wells, based upon site-specific hydrogeologic conditions. Analyze water samples for the parameters listed in Table 6.2.
5.	Fire Protection Training Area No. 3 (59)	Conduct geophysical survey to determine subsurface conditions and optimum monitoring well locations. Install four wells, based upon site-specific hydrogeologic conditions. Analyze water samples for the parameters listed in Table 6.2.

TABLE 6.1
RECOMMENDED MONITORING PROGRAM FOR PHASE II IRP
AT SCOTT AFB
(Continued)

	Site (Rating Score)	Recommended Monitoring Program
6.	Facility 1965 Spill Site (52)	Conduct geophysical survey to determine subsurface conditions and optimum monitoring well locations. Install four wells, based upon site-specific hydrogeologic conditions. Analyze water samples for the parameters listed in Table 6.2.
7.	Sludge Weathering Lagoon (47)	Conduct geophysical survey to determine depth to ground-water. Locate four soil borings within site boundary. Analyze borings for parameters listed in Table 6.2.

Source: Engineering-Science

cost-effective approach utilizes geophysical techniques to obtain local subsurface information. Electrical resistivity (ER) and electromagnetic conductivity (EMC) are recommended geophysical instruments that employ indirect measurement technologies to collect data describing subsurface material electrical properties.

ER and EMC devices respond to changes or contrasts in either the horizontal or vertical planes. These measurements may be correlated to direct sampling methods, such as test borings. Both methods may be utilized in shallow situations (less than thirty feet deep) to determine stratigraphic changes, depth to ground water, aquifer thickness and contaminated zones if sufficient contrast in the local geology exists. ER may be employed in more complicated terrains or in situations where deep contamination is suspected. Using either geophysical technique, wells may then be systematically installed in zones indicated by the appropriate geophysical technique. This approach to monitoring program design significantly reduces both costs and schedules.

The use of geophysical techniques at waste disposal facilities has been well documented in the technical literature. A USEPA guidance manual describes the capabilities and limitations of electrical resistivity at waste disposal facilities and is applicable to the probable conditions that may be encountered at Scott AFB (USEPA, 1978). Other geophysical methodologies can be utilized for specialized purposes - for example, a metal detector may be used in shallow settings to locate buried ferrous materials and the magnetometer may be utilized to locate either buried objects or disturbed zones (backfilled trenches or pits) in shallow and deep settings.

Ground-water quality monitoring systems must be designed for the site-specific conditions existing at a waste disposal facility. Guidelines for well system design have been published in several USEPA reports that contain guidelines applicable to conditions at Scott AFB. For large areas/landfills, or for areas with multiple ground-water flow directions, it is recommended that more than the usual four wells be required (one upgradient and three downgradient, from RCRA, Subpart F, Section 265.91, "Ground-water Monitoring System").

These guidelines also recommend that where multiple flow directions exist beneath a site, geophysical methods should be utilized to guide well placement (both the physical location and the screened interval). In situations where the site is physically large or has an unusual geometry and therefore has a long down-gradient dimension (such as the Scott landfill), the general rule is to install at a minimum one monitoring well for each 250 feet of downgradient frontage (USEPA, 1980). A well spacing of 250 feet is considered to be a maximum allowable interval between wells, assuming that local hydrogeologic conditions are reasonably uniform. Wells must be installed at closer intervals if the site subsurface conditions are determined to be complex.

Fire Protection Training Area No. 2

It is recommended that four monitoring wells be installed at FPTA No. 2 site (one upgradient and three downgradient). A geophysical survey is recommended to determine subsurface conditions prior to well installation. The parameters proposed to be analyzed for in ground-water samples (Table 6.2) will serve as a screening to determine contamination at these sites. More extensive tests may be required if positive results are obtained in the initial sampling.

Landfill

Ten monitoring wells (one upgradient and nine downgradient) constructed into the upper aquifer are recommended because of the large downgradient dimensions. A geophysical survey is recommended to define the extent and subsurface characteristics of this disposal site and to aid in determining efficient monitoring well locations. The results of the geophysical survey should be used to evaluate whether ten wells is the appropriate number of wells to monitor contaminants associated with this site.

The parameters to be analyzed for in the ground-water samples (Table 6.2) are intended as a screening approach to determine potential contamination. Further action may be required upon analyses of initial sampling.

TABLE 6.2
RECOMMENDED LIST OF ANALYTICAL PARAMETERS FOR PHASE II IRP AT SCOTT AFB

Fire Protection Training Area No. 2

pH
Oil and Grease
Total Organic Carbon
Lead
EPA Methods 601, 602

Landfill

pH
Total Dissolved Solids
Oil and Grease
PCB
Metals (Cd, Cr, Fe, Mn, Ni, As, Hg, Zn)
Phenols
Lead
EPA Method 601
Total Organic Carbon

Fire Protection Training Area No. 1

pH
Oil and Grease
Total Organic Carbon
Lead
EPA Methods 601, 602

Facility 8550 Spill Site

pH
Oil and Grease
Total Organic Carbon
Lead

Fire Protection Training Area No. 3

pH
Oil and Grease
Total Organic Carbon
Lead
EPA Methods 601, 602

TABLE 6.2
RECOMMENDED LIST OF ANALYTICAL PARAMETERS FOR PHASE II IRP AT SCOTT AFB

Facility 1965 Spill Site

pH
Oil and Grease
Total Organic Carbon
Lead

Sludge Weathering Lagoon

pH
Oil and Grease
EPA Methods 8010
EPA Methods 8020
Metals (Cd, Cr, Fe, Mn, Ni, As, Hg, Zn)

Source: Engineering-Science

Fire Protection Training Area No. 1

It is recommended that four monitoring wells be installed at FPTA No. 1 site (one upgradient and three downgradient). A geophysical survey is recommended to determine subsurface conditions prior to well installation. The parameters proposed to be analyzed for in groundwater samples (Table 6.2) will serve as a screening to determine contamination at these sites. More extensive tests may be required if positive results are obtained in the initial sampling.

Facility 8550 Spill Site

It is recommended that four wells be installed at the spill site (one upgradient and three downgradient). A geophysical survey is recommended for this site to establish appropriate locations for each well. Table 6.2 lists the parameters that should be analyzed for in the groundwater recovered from the wells.

Fire Protection Training Area No. 3

It is recommended that four monitoring wells be installed at FPTA No. 3 site (one upgradient and three downgradient). A geophysical survey is recommended to determine subsurface conditions prior to well installation. The parameters proposed to be analyzed for in groundwater samples (Table 6.2) will serve as a screening to determine contamination at these sites. More extensive tests may be required if positive results are obtained in the initial sampling.

Facility 1965 Spill Site

It is recommended that four wells be installed at the spill site (one upgradient and three downgradient). A geophysical survey is recommended for this site to establish appropriate locations for each well. Table 6.2 lists the parameters that should be analyzed for in the groundwater recovered from the wells.

Sludge Weathering Lagoon

Because of the mobility of solvents that were disposed of at the site, it is recommended that a minimum of four soil borings should be taken from this site. Each boring should be taken down to the depth of the uppermost aquifer and located within the old lagoon boundaries. Beginning with the first foot of undisturbed soil, every other foot of

boring should be individually composited and analyzed for the parameters listed in Table 6.2 for this site. Further sampling and analysis may be required upon analysis of initial sampling.

RECOMMENDED GUIDELINES FOR LAND USE RESTRICTIONS

It is desirable to have land use restrictions for the identified sites to (1) provide continued protection of human health, welfare, and environment, (2) insure that migration of potential contaminants is not promoted through improper land uses, (3) facilitate compatible development of future USAF facilities and (4) allow identification of property which may be proposed for excess or outlease.

The recommended guidelines for land use restrictions at each identified disposal site at Scott AFB are presented in Table 6.3. A description of the land use restriction guidelines is included in Table 6.4. Land use restrictions at sites recommended for on-site monitoring should be re-evaluated upon completion of the Phase II program and appropriate changes made.

USAF

OCCUPATIONAL AND ENVIRONMENTAL HEALTH LABORATORY

MAJOR DENNIS D. BROWNLEY

TECHNICAL SERVICES DIVISION

INSTALLATION RESTORATION PROGRAM

OBJECTIVES OF IRP

- IDENTIFY PAST HAZARDOUS MATERIAL DISPOSAL AND SPILL SITES
- FULLY EVALUATE ENVIRONMENTAL THREAT
- CONTROL THE MIGRATION OF HAZARDOUS CONTAMINANTS
- CONTROL HAZARDS TO PUBLIC HEALTH, WELFARE AND ENVIRONMENT
- DEVELOP AND EVALUATE REMEDIAL ACTIONS (IF NECESSARY AND FEASIBLE)

CURRENT IRP POLICY

- PROGRAM DEFINITION

  DEQPPM 81-5

- DELEGATION OF RESPONSIBILITY

  EO 12088
  EO 12316
  EO 12580

- LEGISLATIVE MANDATES

  CERCLA
  NCP
  SARA

PROGRAM DEFINITION

DEQPPM 81-5 DEFENSE ENVIRONMENTAL QUALITY PROGRAM POLICY MEMORANDUM

EXECUTIVE ORDERS (EO)

EO 12088 DIRECTS DEPARTMENT OF DEFENSE TO COMPLY WITH SUBSTANTIVE AND PROCEDURAL STATUTES

EO 12316 DELEGATES RESPONSIBILITY FOR RESPONSE ACTIONS AT DOD SITES TO THE SECRETARY OF DEFENSE

EO 12580 DEFINES RESPONSIBILITIES OF EPA AND DEPARTMENT OF DEFENSE UNDER SARA (NPL AND NON-NPL SITES)

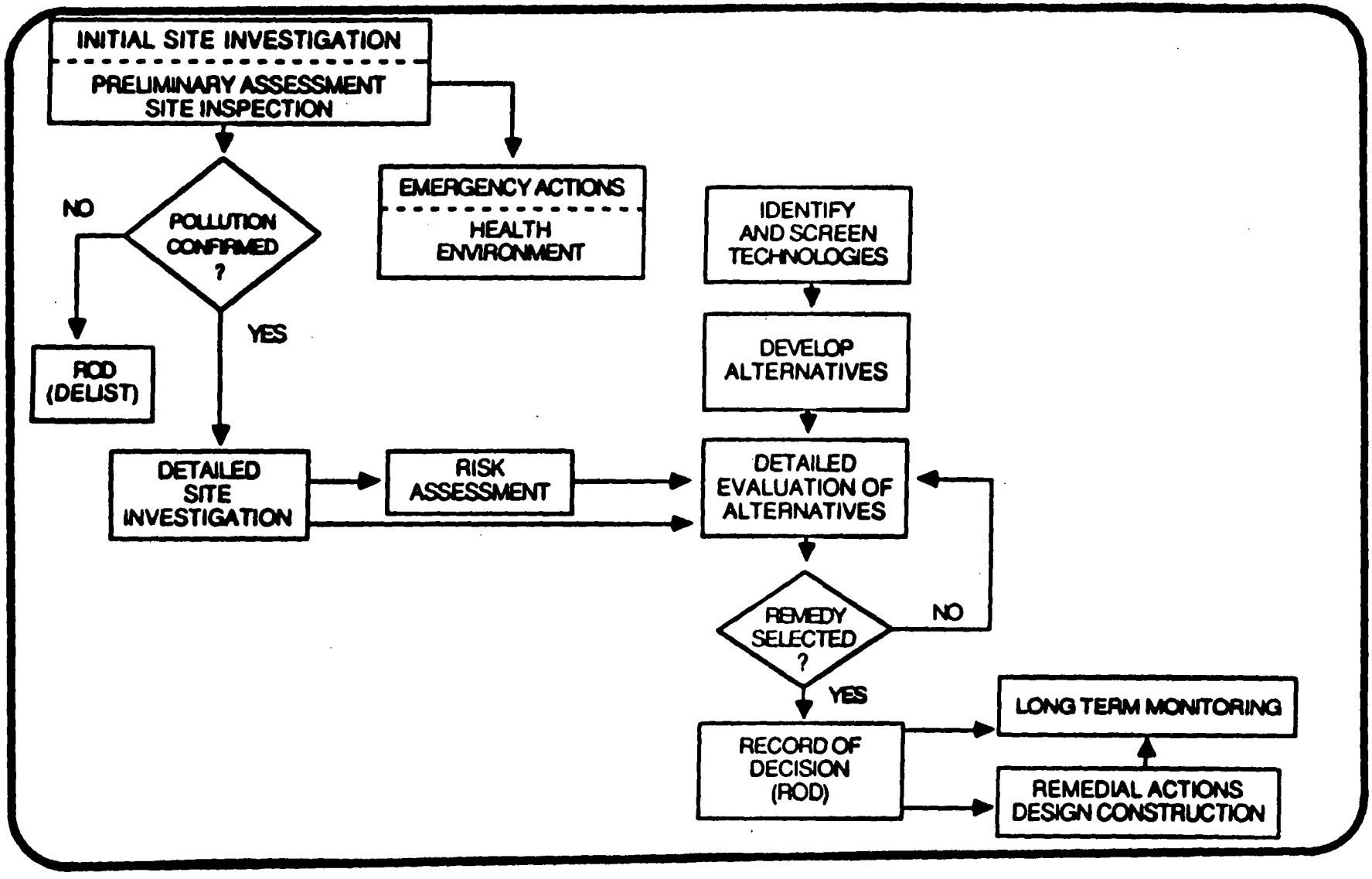
LEGISLATIVE MANDATES

CERCLA or "SUPER-FUND"	COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND LIABILITY ACT OF 1980 (PUBLIC LAW 96-510)
NCP	NATIONAL OIL AND HAZARDOUS SUBSTANCES POLLUTION CONTINGENCY PLAN (40 CFR 300)
SARA	SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (PUBLIC LAW 99-499)

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (SARA)

- COMPLY WITH CERCLA (BASIC STATUTE)
- COMPLY WITH NCP
- APPLIES TO EACH DEPARTMENT, AGENCY AND INSTRUMENTALITY OF THE U.S.
- COMPLY PROCEDURALLY AND SUBSTANTIVELY

THE INSTALLATION RESTORATION PROGRAM



TERMINOLOGY

UNDER PHASED IRP	UNDER RI/FS
INSTALLATION	SITE
AF SITE	FACILITY
LOCATION	N/A

REMEDIAL INVESTIGATION

- INITIAL SITE INVESTIGATION
  - SITE INSPECTION
  - INITIAL SITE CHARACTERIZATION
  - HYDROGEOLOGICAL STUDY
- DETAILED SITE CHARACTERIZATION
  - CONFIRM CONTAMINATION
  - QUANTIFY CONTAMINATION
  - DEFINE MOBILITY, TOXICITY, AND VOLUME (MTV)
- EMERGENCY REMOVAL

FEASIBILITY STUDY

- IDENTIFY TECHNOLOGIES
- SCREEN TECHNOLOGIES & DEVELOP ALTERNATIVES
- DETAILED EVALUATION OF ALTERNATIVES
- SELECT REMEDY THAT WILL:
  - PROTECT HEALTH/WELFARE AND ENVIRONMENT
  - REDUCE MTV
- RECORD OF DECISION (ROD)

RI <-------> RISK ASSESSMENT <-------> FS

KEY PLAYERS IN THE IRP-RI/FS PROCESS

- INSTALLATION (CC, DE, JA, PA, SG)
- REGULATORY AGENCIES (FEDERAL, STATE, LOCAL)
- PUBLIC
- CONTRACTOR
- USAFOEHL/TS TECHNICAL PROGRAM MANAGER (TPM)

IRP-RI/FS PROCESS OVERVIEW

PARAMETER	IRP - RI/FS PROCESS
DRIVING FORCE:	SITE EVAL + SITE CHARACTERIZATION + ENGINEERING FIX
WORK FLOW:	PARALLEL (CONCURRENT)
TARGET:	EXTENT + REMEDY
DATA MGT:	PSEUDO-STANDARD
DATA STORAGE:	PAPER (HARD COPY) + COMPUTER (MULTIMEDIA)
DATA TYPE:	CHEMICAL + HYDROGEOLOGICAL + ENGINEERING

CHANGES FROM OLD IRP PHASE II ARE UNDERLINED

MULTIDISCIPLINARY PROGRAM

- BIOLOGISTS
- CHEMISTS
- TOXICOLOGISTS
- CLERICAL
- CIVIL ENGINEERS
- CONTRACT SPECIALISTS
- ENVIRONMENTAL ENGINEERS
- GEOLOGISTS
- HYDROLOGISTS
- LAWYERS
- TECHNICIANS
- PUBLIC AFFAIRS
- GEOTECHNICAL ENGINEERS
- AIR QUALITY SPECIALISTS
- WELL CONSTRUCTION SPECIALISTS

MANAGEMENT ROLES

AND

RESPONSIBILITIES

MANAGEMENT ROLES & RESPONSIBILITIES

MAJCOM

- PROGRAM MANAGER
- OBTAIN FUNDING
- ESTABLISH AND MANAGE PRIORITIES
- COORDINATE PRIORITY CHANGES WITH THE USAFOEHL/TS

MANAGEMENT ROLES & RESPONSIBILITIES (CONT'D)

INSTALLATION

- PROJECT MANAGER
- REVIEW & COORDINATE DRAFTS (SOWs, REPORTS, ETC.)
- INTERFACE WITH REGULATORY AGENCIES
- ESTABLISH COORDINATING COMMITTEE (WHEN NEEDED)
- DEVELOP & COORDINATE COMMUNITY RELATIONS PLAN
- CONSOLIDATE COMMENTS FROM OTHER REVIEWERS
- PROVIDE SUPPORT TO CONTRACTOR (INCL LOGISTICS)
- MONITOR CONTRACTOR'S FIELD ACTIVITIES
- KEEP MAJCOM INFORMED

MANAGEMENT ROLES & RESPONSIBILITIES (CONT'D)

USAFOEHL/TS

- ESTABLISH TECHNICAL REQUIREMENTS
- PREPARE SOW AND CONTRACT PACKAGES
- MONITOR AND GUIDE TECHNICAL EFFORT
- REVIEW/EVALUATE DRAFT REPORTS
- PERFORM WORK (TECHNICAL, CONTRACTUAL, ETC.)
- PROVIDE TECHNICAL CONSULTATION
- REDIRECT CONTRACTOR THROUGH PROCUREMENT PROCESS

MANAGEMENT ROLES & RESPONSIBILITIES (CONT'D)

CONTRACTOR

- STRICTLY PERFORM ALL WORK SPECIFIED IN THE SOW
  - CHANGES CAN BE AUTHORIZED ONLY BY CONTRACTING OFFICER THROUGH USAFOEHL/TS CONTRACTUAL PROCESS (NO ORAL CONTRACTING!)
- SUPERVISE CONTRACTOR PERSONNEL AT THE SITE

PLANS

- WORKPLAN
- QUALITY ASSURANCE PROJECT PLAN (QAPP)
- HEALTH AND SAFETY PLAN
- COMMUNITY RELATIONS PLAN

PLANS

WORKPLAN

- BACKGROUND
- SITE HISTORY
- DETERMINING ARARs
- DEVELOP DATA QUALITY OBJECTIVES
- WORK SCOPE
  - RI
  - FS
- SCHEDULE

PLANS

QAPP

- QA/QC
  - SAMPLING PROCEDURES
  - ANALYTICAL PROCEDURES
  - DATA VALIDATION
- METHODS PROTOCOLS
  - DRILLING TECHNIQUES
  - SITE MANAGEMENT
  - SAMPLE COLLECTION

PLANS

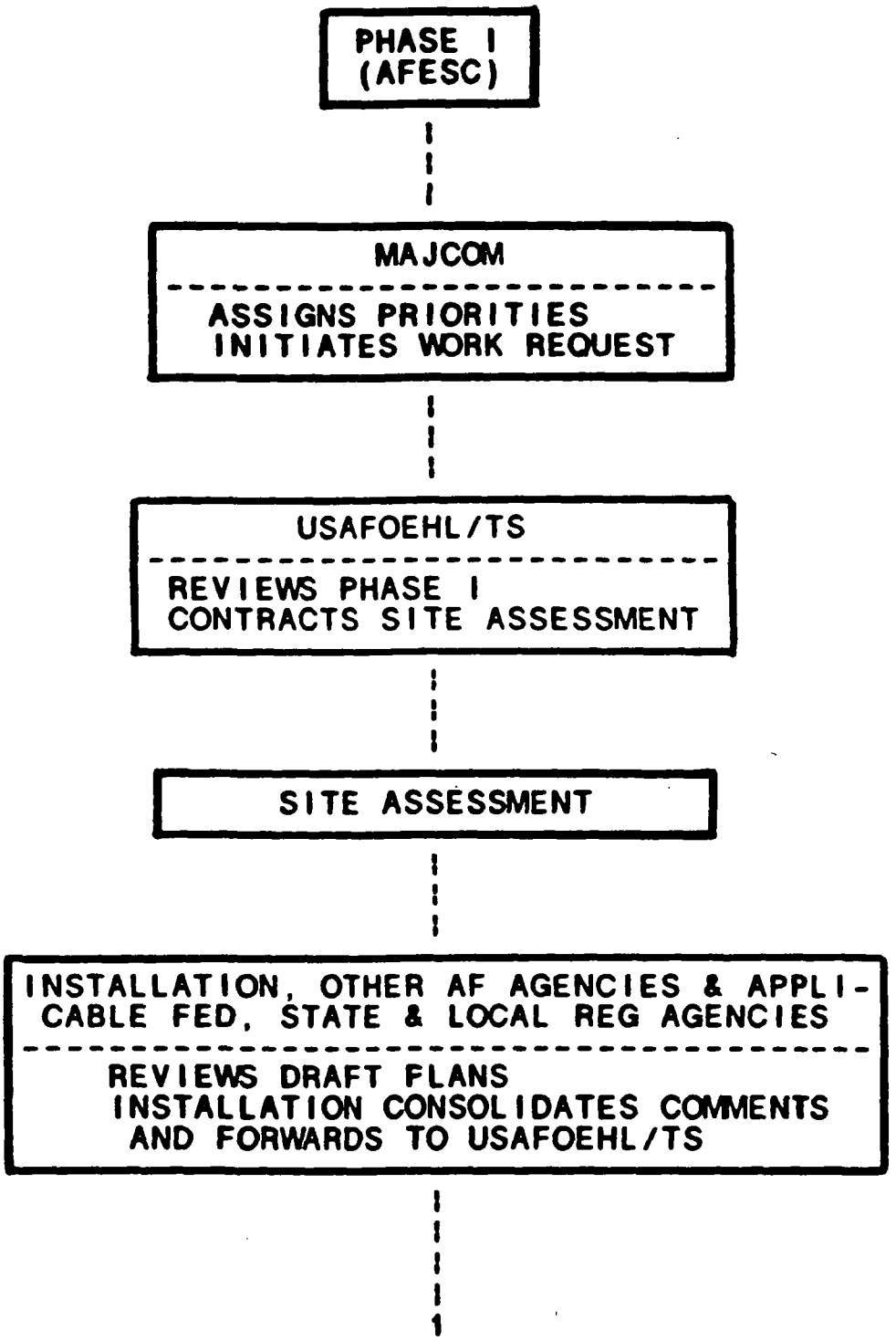
HEALTH & SAFETY PLAN

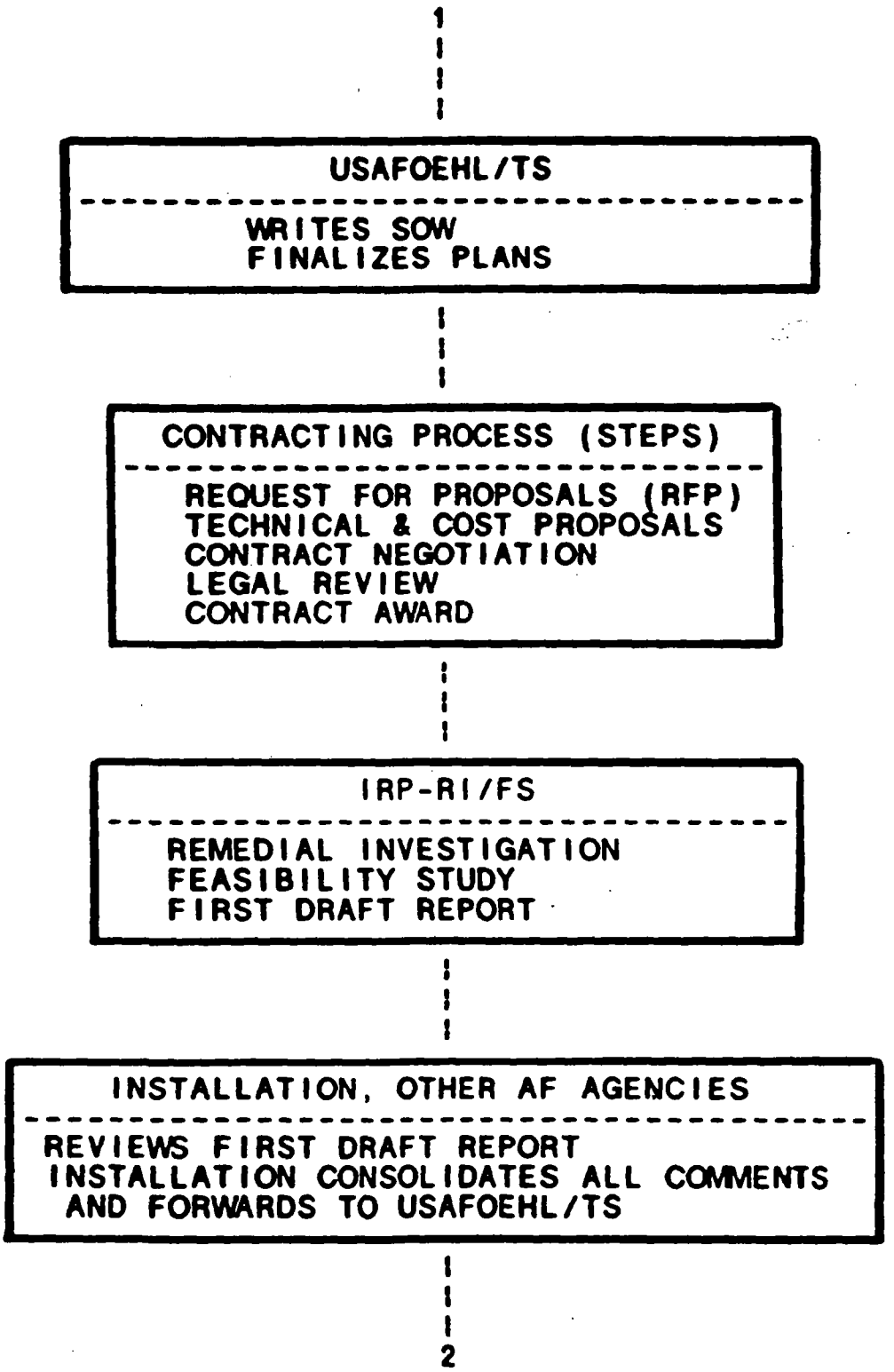
- PREPARED BY CONTRACTOR
- DESCRIBES PERSONNEL PROTECTION MEASURES TO BE EMPLOYED DURING FIELD WORK

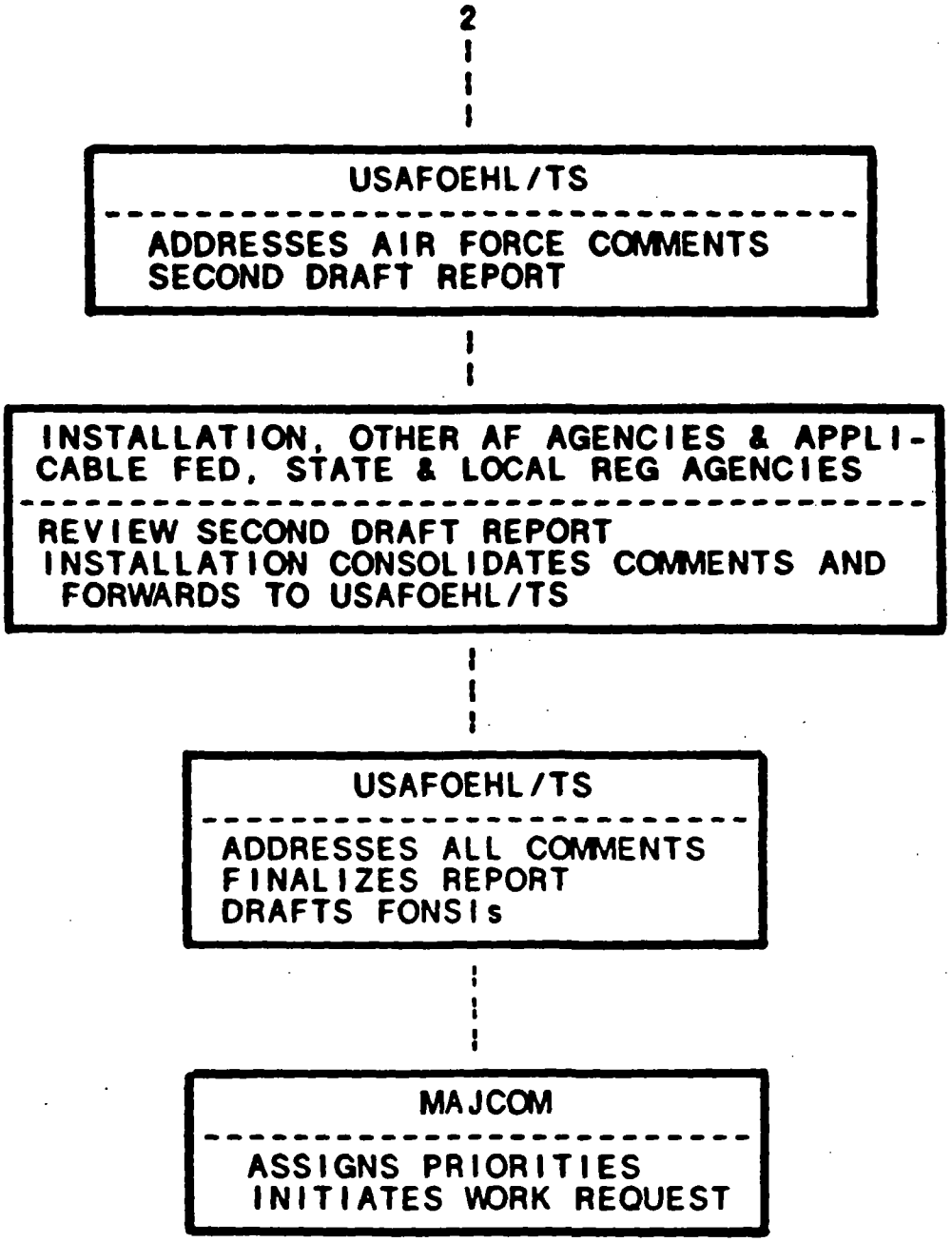
COMMUNITY RELATIONS PLAN

- PREPARED BY INSTALLATION PUBLIC AFFAIRS (PA)
- DEFINES HOW THE INSTALLATION PLANS TO DISSEMINATE INFORMATION TO THE PUBLIC AND NEWS MEDIA

IRP-RI/FS FLOW DIAGRAM




1
USAFOEHL/TS
WRITES SOW
FINALIZES PLANS
CONTRACTING PROCESS (STEPS)
REQUEST FOR PROPOSALS (RFP)
TECHNICAL & COST PROPOSALS
CONTRACT NEGOTIATION
LEGAL REVIEW
CONTRACT AWARD
IRP-RI/FS
REMEDIAL INVESTIGATION
FEASIBILITY STUDY
FIRST DRAFT REPORT
INSTALLATION, OTHER AF AGENCIES
REVIEWS FIRST DRAFT REPORT
INSTALLATION CONSOLIDATES ALL COMMENTS
AND FORWARDS TO USAFOEHL/TS
2


USAFOEHL/TS
ADDRESSES AIR FORCE COMMENTS
SECOND DRAFT REPORT
INSTALLATION, OTHER AF AGENCIES & APPLI-
CABLE FED, STATE & LOCAL REG AGENCIES
REVIEW SECOND DRAFT REPORT
INSTALLATION CONSOLIDATES COMMENTS AND
FORWARDS TO USAFOEHL/TS
USAFOEHL/TS
ADDRESSES ALL COMMENTS
FINALIZES REPORT
DRAFTS FONSIs
MAJCOM
ASSIGNS PRIORITIES
INITIATES WORK REQUEST